CLAIMS

The invention is claimed as follows:

1. A flow sensor comprising:

a light emitter;

a light detector; and

a member placed in a flow path between the emitter and the detector, the member opening upon flow through the flow path such that light from the emitter is detected by the detector, the member closing upon a low pressure condition in the flow path such that not as much light from the emitter is detected by the detector.

2. The flow sensor of Claim 1, wherein the light emitter is selected from the group consisting of: a light emitting diode, an infrared light emitter, a fiber optic source and any combination thereof.

3. The flow sensor of Claim 1, wherein the light detector is selected from the group consisting of: a phototransistor, an infrared light detector, a photodiode, a photovoltaic cell and any combination thereof.

4. The flow sensor of Claim 1, wherein the member includes a characteristic selected from the group consisting of: being spring loaded, being flexible, being resilient, being naturally biased, being hinged, including a septum and any combination thereof.

5. The flow sensor of Claim 1, which includes a housing that houses the emitter, the detector and the member.

6. The flow sensor of Claim 1, which includes first and second housings, the emitter positioned in the first housing, the detector positioned in the second housing and the member coupled between the first and second housings.

7. The flow sensor of Claim 1, which includes at least one electrical component operating with the light emitter or detector, the component selected from the group consisting of: an integrated circuit, a power regulator, an indicating light, a resister, a transistor, a diode and any combination thereof.

8. The flow sensor of Claim 1, which includes a first output indicative of a fluid flow state and a second output indicative of a low pressure state.

9. The flow sensor of Claim 1, which includes an output that ranges depending on a relative amount of fluid flowing through the flow path.

10. The flow sensor of Claim 1, wherein the member is configured to close upon a low pressure condition in the flow path such that light from the emitter is not detected by the detector.

11. The flow sensor of Claim 1, wherein the low pressure condition is a zero pressure condition or a less than a cracking pressure condition.

12. A flow sensor comprising:

a member placed in a flow path, the member including a stationary portion and an openable portion;

a first output state caused when the openable portion resides in a first position, the first output state indicative of a first flow state; and

a second output state caused when the openable portion resides in a second position, the second output state indicative of a second flow state.

13. The flow sensor of Claim 12, wherein the first output state is a no/low light detect state and the first flow state is a no/low pressure state.

14. The flow sensor of Claim 12, wherein the first output state is a de-energized state and the first flow state is a no/low pressure state.

15. The flow sensor of Claim 12, wherein the first output state is a bottom of an output range state and the first flow state is a no/low pressure state.

16. The flow sensor of Claim 12, wherein the first output state is a no electrical flow state and the first flow state is a no/low pressure state.

17. The flow sensor of Claim 12, wherein the second output state is a light detected state and the second flow state is a fluid flowing state.

18. The flow sensor of Claim 12, wherein the second output state is an energized state and the second flow state is a fluid flowing state.

19. The flow sensor of Claim 12, wherein the second output state is a top of an output range state and the second flow state is a full flow state.

20. The flow sensor of Claim 12, wherein the second output state is an intermediate output of an output range state and the second flow state is an intermediate flow state.

21. The flow sensor of Claim 12, wherein the first fluid flow state is a non-alarm state and the second fluid flow state is an alarm state.

22. The flow sensor of Claim 12, wherein the first fluid flow state is an alarm state and the second fluid flow state is a non-alarm state.

23. The flow sensor of Claim 12, wherein the openable portion is moved from the first position to the second position based on a flow of fluid past the member, the fluid being liquid or gaseous.

24. A medical fluid system comprising:

a valve operable to enable fluid to be delivered to a patient;

a sensor including an openable member placed in a flow path; and

a control scheme operable to signal an alarm based on whether the member resides in a first or a second position and an expected opened/closed state of the valve.

25. The medical fluid system of Claim 24, wherein the fluid is selected from the group consisting of: dialysate, blood and any combination thereof.

26. The medical fluid system of Claim 24, wherein the valve is operable to enable fluid to be delivered to the patient's peritoneal cavity or to a blood corporeal circuit.

27. The medical fluid system of Claim 24, wherein the member is opened from the first position to the second position based on a flow of the fluid past the member.

28. The medical fluid system of Claim 24, wherein the fluid is a first fluid, and wherein the member is moved by a second fluid.

29. A flow sensing method comprising the steps of:

establishing a first flow state when an openable portion of a member located in a fluid flow path resides in a first position; and

establishing a second fluid flow state when a force due to a flow of a fluid through the path causes the openable portion of the member to move to a second position.

30. The flow sensing method of Claim 29, wherein establishing the first flow state includes determining that a low pressure condition exists.

31. The flow sensing method of Claim 29, wherein establishing the second flow state includes determining that the fluid is flowing within the flow path.

32. The flow sensing method of Claim 29, wherein establishing the first flow state includes detecting at least a relatively low amount of light from a light source and establishing the second flow state includes detecting a relatively high amount of light from the light source.

33. The flow sensing method of Claim 29, wherein establishing the first flow state includes not making an electrical connection and establishing the second flow state includes making the electrical connection.

34. The flow sensing method of Claim 29, wherein establishing the first flow state includes making an electrical connection and establishing the second flow state includes unmaking the electrical connection.

35. The flow sensing method of Claim 29, which includes disabling at least one flow component by establishing the first fluid flow state.

36. The flow sensing method of Claim 29, which includes enabling at least one flow component by establishing the second fluid flow state.

37. The flow sensing method of Claim 29, which includes enabling at least one flow component by establishing the first fluid flow state.

38. The flow sensing method of Claim 29, which includes disabling at least one flow component by establishing the second fluid flow state.